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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,196	04/23/2001	John P. O'Loughlin	TRW(VSSIM)4719-1	2264

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EXAMINER
LUM, LEE S

ART UNIT	PAPER NUMBER
3611	

DATE MAILED: 08/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/840,196	Applicant(s) O'LOUGHLIN ET AL.	
	Examiner Ms. Lee S. Lum	Art Unit 3611	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1A. **Claims 1-16, 19, 20, 23, 24 and 26-54** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers et al 6299199, in view of Lewis 6142508, and Mahon et al 5551723.

Re **Claims 1, 2, 4, 5, 19, 20, 23, 24 and 26-28**, Bowers discloses apparatus 10 for protecting an vehicle occupant comprising

airbag 14 having forward and rearward portions along the side of the vehicle, uninflated portion 64,

fluid source 24,

fill tube 22 with first end connected to the fluid source (Fig 1, towards fluid source 24), and near rear edge of the airbag,

second end connected in the airbag (Fig 1),

with spaced apertures (unidentified, Col 1, lines 65-66) to inflate the airbag to a first pressure, and,

sensor 100 indicative of a vehicle condition, and actuating the airbag.

Bowers does not disclose the fluid consisting essentially of helium, while Lewis shows the fluid as consisting of helium (Col 9, last two lines), and,

having equal pressure and temperature in both portions by spacing the apertures 74 (Col 10, last three lines, to Col 11, line 4).

It would have been obvious to one with ordinary skill at the time the invention was made to include helium, as shown in Lewis, as the inflation material for its particular characteristics, thus achieving desired inflation operation. Likewise, it would have been obvious to one with ordinary skill at the time the invention was made to include varied spacing of the apertures, as shown in Lewis, to achieve these characteristics, thus achieving inflation for specific applications.

The combination of Bowers in view of Lewis further show

the fluid directed into the forward and rearward portions as having generally the same temperature and pressure during initial inflation (as disclosed in Lewis, Col 10, last three lines, to Col 11, line 4, and also Col 11, last three lines, to Col 12, line 1), and,

the fluid in the airbag as having a temperature about equal to an ambient temperature in which the airbag is inflated for at least 95% of a predetermined time period of at least 5-7 seconds (inherent - the inflation fluid would inherently have a temperature similar to the ambient temperature because the apparatus would be located in an area of the vehicle which would also be at a similar temperature, except when the airbag is activated).

With respect to the first feature, it would have been obvious to one with ordinary skill at the time the invention was made to include equal spacing of the apertures, as shown in Lewis, in order to inflate the portions of the airbag with substantially equal temperature and pressure, thereby maximizing passenger safety, and minimizing possible injury (in the case where the airbag inflates unevenly).

The second feature is inherent.

Neither patent discloses maintaining inflation above a second pressure for a predetermined period of at least 5-7 seconds, while Mahon shows this characteristic in Col 1, lines 43-46; "the flowrate of gas...be somewhat gentle..., [then] after that the flowrate should be relatively larger". It would have been obvious to one with ordinary skill at the time the invention was made to include this feature to maximize passenger protection, as shown in Mahon, when preceded by an initial gentle inflation (which minimizes injury by sudden inflation), thus achieving desired inflation objectives.

Re **Claims 3, 6 and 8-15**, Lewis shows the apertures as arranged in groups in (Col 10, last three lines, to Col 11, line 4), where one group consists of a number of apertures spaced closer together, and spaced from others which are farther from this first group. This characteristic is application-specific, and therefore, there exists various ways to arrange the apertures for the specific application desired. Nevertheless, it would have been obvious to one with ordinary skill at the time the invention was made to vary the spacing of the apertures, as exemplified in Lewis, such that particular design parameters of pressure and temperature between the portions are achieved, thus increasing applicability.

Re **Claims 7 and 16**, the patents do not disclose the apertures nor fill tube as having specific sizes. Although these features is application-specific, it would have been obvious to one with ordinary skill at the time the invention was made to include sizes for the apertures and fill tube as suggestions as towards the scope of the invention.

Re **Claim 29**, Lewis shows the temperature as just above the ambient in which the airbag is inflated, in Col 11, last three lines, to Col 12, first paragraph. This feature is inherent in the particular configuration described.

Re **Claims 30 and 31**, Bowers further discloses

the fill tube as containing air (inherent), and undergoing adiabatic compressive heating, including increasing in heat (inherent).

Re **Claim 32**, Bowers in view of Lewis further shows that the temperature is about equal to the ambient for at least 98% of the predetermined period of time (5-7 secs). This feature is inherent in the particular configuration described (see rationale for similar limitation in Bowers in view of Lewis, p 2 above).

Re **Claims 33 and 34**, the patents do not disclose specific ranges for the first and second pressures. Although these features are application-specific, it would have been obvious to one with ordinary skill at the time the invention was made to include these ranges as a suggestion of the applications by which the invention may be designed.

Re **Claims 35-45 and 51-54**, the patents show the recited elements as discussed above.

Re **Claims 46-49**, the patents show a method for protecting an vehicle occupant, the steps of the method derived from the structure and means discussed above.

Re **Claims 50 and 51**, the patents do not show the step of creating a computer-generated model to select the number of apertures, but this step involves the process of making, which is immaterial to apparatus claims. Nevertheless, it would have been obvious to one with ordinary skill at the time the invention was made to include this step as one way to determine the number of necessary apertures. This step would be one of a number of functionally equivalent ways to determine this characteristic.

1B. **Claims 17, 18, 21, 22 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers in view of Lewis and Mahon, and in further view of Stevens et al 6296274.

Re **Claims 17 and 18**, the previous patents do not disclose the fluid as directed at a supersonic velocity, creating a shock wave, while Stevens shows this feature in Col 3, lines 39-44. While this feature is application-specific, it would have been obvious to one with ordinary skill at the time the invention was made to include this feature, as shown in Stevens, as one way to deliver the inflation fluid for specific applications.

Re **Claims 21 and 22**, Stevens also shows the airbag as overlying portions of the A, B and C pillars. It would have been obvious to one with ordinary skill at the time the invention was made to include these features, as shown in Stevens, in order to effect the maximum protection for passengers in both front and rear seats during a crash event, thus increasing multiple-passenger safety.

Re **Claim 25**, Stevens also shows the fluid as compressed at about 6250 psig in Col 3, lines 37-39. While this feature is application-specific, it would have been obvious to one with ordinary skill at the time the invention was made to include this spec, as shown in Stevens, as one in a range in which the fluid may be stored.

2. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure, in addition to the art listed on the IDS filed 4/23/01: Breed et al 5772238, Bailey et al 6237941, Welch et al 6042141, Rink et al 5941562, Mason 3807755.

3. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, 9-530, M-F. Our fax number is (703) 308-2571. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer assistance at (703) 306-5771.

Ms. Lee S. Lum
Examiner
8/21/02

ERIC CULBRETH
PRIMARY EXAMINER
8/21/02